

Consortium for Site Characterization Technology

Developers face many problems moving new site characterization and monitoring technologies from prototype to routine use. These include convincing regulators and customers the product meets its claims; lack of credible performance data; access to unbiased third parties to evaluate the data; and identifying test sites. The government's interest in achieving national environmental goals faster, better, and less expensively warranted a united effort to address these problems.

The **Consortium** is a partnership between the DoD, DOE, EPA, and the private sector whose goal is to increase the use of innovative characterization technologies in assessing contaminated sites. The CSCT will identify, demonstrate, evaluate, verify and transfer information about innovative and alternative monitoring, measurement, and site characterization technologies to developers, users, and regulators.

How does the Process Work?

The **Consortium** is designed around a series of guidance manuals which define how a demonstration will be conducted and how the data will be evaluated. The developer is expected to make use of these documents by working with the Consortium staff to develop an acceptable demonstration plan. The purpose of the demonstration plan is to design a field exercise that will allow the performance claims for the technology to be evaluated in an objective and scientifically sound manner. The developer will be expected to conduct the demonstration at suitable field sites. The Consortium will support the developer in selecting the sites, approving the demonstration plan, and auditing the demonstration. The Consortium will also provide for data interpretation and report preparation, and issue a verification statement through EPA.

Cone Penetrometer/Laser Induced Fluorescence (LIF)

What it is: A field screening method that couples a fiber optic-based chemical sensor system to a truck-mounted cone penetrometer. As the penetrometer probe is pushed into the ground, sensors in its tip utilize LIF. The sensor issues a pulsed laser coupled with an optical detector to make fluorescence measurements via optical fibers. The sensors detect petroleum hydrocarbons from their fluorescent response to excitation by ultraviolet light passing to the soil through a window in the tip of the probe. This fluorescent signal is collected by the probe and carried back up the penetrometer rod for real time analysis.

When/where demonstrated:

Port Hueneme, CA May 15-19, 1995

The site is a fuel farm with leakage from aboveground fuel storage tanks. Contamination was determined to be from a tank known to contain diesel fuel marine (DFM).

Albuquerque, NM November 6-8, 1995

An active fuel tank farm at Sandia National Laboratories. The tanks contained #2 diesel fuel which was leaked during transfer operations.

Who participated:

- Rapid Optical Screening Tool (ROST), Loral Defense Systems, Eagan, MN
- Tri-Services Site Characterization and Analysis Penetrometer System (SCAPS), US Navy

For more information on the Consortium contact:

EPA-542-F-96-009b

April 1996

Mr. Eric Koglin/Dr. Steve Billets
EPA National Exposure Research Laboratory
Characterization Research Division
P. O. Box 93478
Las Vegas, Nevada 89193-3478
702-798-2432 fax 798-2261
702-798-2232; fax 798-2261
Internet: billets.stephen@wpmail.las.epa.gov
Internet: koglin.eric@wpmail.las.epa.gov

Mr. Daniel Powell
EPA Technology Innovative Office (5102G)
401 M Street, SW
Washington, DC 20460
703-603-7196; fax 603-9135
Internet: powell.dan@epamail.epa.gov

Technology Verification Program

Cone Penetrometer/Laser Induced Fluorescence (LIF)

The Consortium for Site Characterization Technology is supported by the Environmental Technology Initiative and Strategic Environmental Research and Development Program.

